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<110> Coverley, Dawn

<120> REPLICATION PROTEIN

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<140> PCT/GB03/05334
<141> 2003-12-05

<150> GB 0228337.2
<151> 2002-12-05

<160> 73

<170> PatentIn version 3.1

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ccggcttgtt acagatat 78

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20 25 30

Gln Gln Ile Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
35 40 45

Ala Ser Leu Ser Ile Pro Val Ser Arg Gly Leu Pro Gln Gln Ser Ser
50 55 60

Pro Gln Gln Leu Leu Ser Leu Gln Gly Leu His Ser Thr Ser Leu Leu
65 70 75 80

Asn Gly Pro Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
85 90 95

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Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Gly Ala Ser Leu
            100                 105                 110

Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Ala Phe Asn Val Thr
        115                 120                 125

Ala Pro Ser Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Met Val Thr
    130                 135                 140

Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu
145                 150                 155                 160

Gly Pro Pro Pro Val Gly Val Pro Ile Asn Pro Ser Gln Leu Asn His
                165                 170                 175

Ser Gly Arg Asn Thr Gln Lys Gln Ala Arg Thr Pro Ser Ser Thr Thr
            180                 185                 190

Pro Asn Arg Lys Asp Ser Ser Ser Gln Thr Val Pro Leu Glu Asp Arg
        195                 200                 205

Glu Asp Pro Thr Glu Gly Ser Glu Glu Ala Thr Glu Leu Gln Met Asp
    210                 215                 220

Thr Cys Glu Asp Gln Asp Ser Leu Val Gly Pro Asp Ser Met Leu Ser
225                 230                 235                 240

Glu Pro Gln Val Pro Glu Pro Glu Pro Phe Glu Thr Leu Glu Pro Pro
                245                 250                 255

Ala Lys Arg Cys Arg Ser Ser Glu Glu Ser Thr Glu Lys Gly Pro Thr
            260                 265                 270

Gly Gln Pro Gln Ala Arg Val Gln Pro Gln Thr Gln Met Thr Ala Pro
        275                 280                 285

Lys Gln Thr Gln Thr Pro Asp Arg Leu Pro Glu Pro Pro Glu Val Gln
    290                 295                 300

Met Leu Pro Arg Ile Gln Pro Gln Ala Leu Gln Ile Gln Thr Gln Pro
305                 310                 315                 320
```

```
Lys Leu Leu Arg Gln Ala Gln Thr Gln Thr Ser Pro Glu His Leu Ala
                325                 330                 335

Pro Gln Gln Asp Gln Val Glu Pro Gln Val Pro Ser Gln Pro Pro Trp
            340                 345                 350

Gln Leu Gln Pro Arg Glu Thr Asp Pro Pro Asn Gln Ala Gln Ala Gln
        355                 360                 365

Thr Gln Pro Gln Pro Leu Trp Gln Ala Gln Ser Gln Lys Gln Ala Gln
    370                 375                 380

Thr Gln Ala His Pro Gln Val Pro Thr Gln Ala Gln Ser Gln Glu Gln
385                 390                 395                 400

Thr Ser Glu Lys Thr Gln Asp Gln Pro Gln Thr Trp Pro Gln Gly Ser
                405                 410                 415

Val Pro Pro Pro Glu Gln Ala Ser Gly Pro Ala Cys Ala Thr Glu Pro
            420                 425                 430

Gln Leu Ser Ser His Ala Ala Glu Ala Gly Ser Asp Pro Asp Lys Ala
        435                 440                 445

Leu Pro Glu Pro Val Ser Ala Gln Ser Ser Glu Asp Arg Ser Arg Glu
    450                 455                 460

Ala Ser Ala Gly Gly Leu Asp Leu Gly Glu Cys Glu Lys Arg Ala Gly
465                 470                 475                 480

Glu Met Leu Gly Met Trp Gly Ala Gly Ser Ser Leu Lys Val Thr Ile
                485                 490                 495

Leu Gln Ser Ser Asn Ser Arg Ala Phe Asn Thr Thr Pro Leu Thr Ser
            500                 505                 510

Gly Pro Arg Pro Gly Asp Ser Thr Ser Ala Thr Pro Ala Ile Ala Ser
        515                 520                 525

Thr Pro Ser Lys Gln Ser Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala
    530                 535                 540

Ser Ser Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu Ala Gln
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545 550 555 560

His Gln Gln Arg Leu Gly Glu Ile Gln His Ser Ser Gln Thr Cys Leu
565 570 575

Leu Ser Leu Leu Pro Met Pro Arg Asp Ile Leu Glu Lys Glu Ala Glu
580 585 590

Asp Pro Pro Pro Lys Arg Trp Cys Asn Thr Cys Gln Val Tyr Tyr Val
595 600 605

Gly Asp Leu Ile Gln His Arg Arg Thr Gln Glu His Lys Val Ala Lys
610 615 620

Gln Ser Leu Arg Pro Phe Cys Thr Ile Cys Asn Arg Tyr Phe Lys Thr
625 630 635 640

Pro Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys Asp Lys
645 650 655

Ala Gln Glu Leu Lys Thr Leu Glu Lys Glu Thr Gly Ser Pro Asp Glu
660 665 670

Asp His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Ser Gly Gln
675 680 685

Glu Glu Asp Glu Asp Asp Asp Glu Glu Glu Glu Glu Glu Gly Glu Ile
690 695 700

Glu Ala Glu Glu Glu Phe Cys Lys Gln Val Lys Pro Arg Glu Thr Ser
705 710 715 720

Ser Glu Gln Gly Lys Gly Ser Glu Thr Tyr Asn Pro Asn Thr Ala Tyr
725 730 735

Gly Glu Asp Phe Leu Val Pro Val Met Gly Tyr Val Cys Gln Ile Cys
740 745 750

His Lys Phe Tyr Asp Ser Asn Ser Glu Leu Arg Leu Ser His Cys Lys
755 760 765

Ser Leu Ala His Phe Glu Asn Leu Gln Lys Tyr Lys Ala Lys Asn Pro
770 775 780

```
Ser Pro Pro Pro Thr Arg Pro Val Ser Arg Lys Cys Ala Ile Asn Ala
785                 790                 795                 800

Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser His Gln Pro Ser Pro
                805                 810                 815

Gln Asp Thr Val Lys Met Pro Ser Lys Val Lys Pro Gly Ser Pro Gly
            820                 825                 830

Leu Pro Pro Pro Leu Arg Arg Ser Thr Arg Leu Lys Thr
        835                 840                 845
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<210> 27
<211> 716
<212> PRT
<213> Mouse

<400> 27

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Ser Thr Ser Leu Leu Asn Gly Pro Met Leu Gln Arg Ala Leu Leu Leu
1               5                   10                  15

Gln Gln Leu Gln Gly Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr
            20                  25                  30

Asp Gly Ala Ser Leu Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg
        35                  40                  45

Ala Phe Asn Val Thr Ala Pro Ser Leu Ala Ala Pro Ser Leu Thr Pro
    50                  55                  60

Pro Gln Met Val Thr Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr
65                  70                  75                  80

Arg Gln Ser Leu Leu Gly Pro Pro Pro Val Gly Val Pro Ile Asn Pro
                85                  90                  95

Ser Gln Leu Asn His Ser Gly Arg Asn Thr Gln Lys Gln Ala Arg Thr
            100                 105                 110

Pro Ser Ser Thr Thr Pro Asn Arg Lys Thr Val Pro Leu Glu Asp Arg
        115                 120                 125
```

```
Glu Asp Pro Thr Glu Gly Ser Glu Glu Ala Thr Glu Leu Gln Met Asp
    130                 135                 140

Thr Cys Glu Asp Gln Asp Ser Leu Val Gly Pro Asp Ser Met Leu Ser
145                 150                 155                 160

Glu Pro Gln Val Pro Glu Pro Glu Pro Phe Glu Thr Leu Glu Pro Pro
                165                 170                 175

Ala Lys Arg Cys Arg Ser Ser Glu Glu Ser Thr Glu Lys Gly Pro Thr
            180                 185                 190

Gly Gln Pro Gln Ala Arg Val Gln Pro Gln Thr Gln Met Thr Ala Pro
        195                 200                 205

Lys Gln Thr Gln Thr Pro Asp Arg Leu Pro Glu Pro Pro Glu Val Gln
    210                 215                 220

Met Leu Pro Arg Ile Gln Pro Gln Ala Leu Gln Ile Gln Thr Gln Pro
225                 230                 235                 240

Lys Leu Leu Arg Gln Ala Gln Thr Gln Thr Ser Pro Glu His Leu Ala
                245                 250                 255

Pro Gln Gln Asp Gln Val Pro Thr Gln Ala Gln Ser Gln Glu Gln Thr
            260                 265                 270

Ser Glu Lys Thr Gln Asp Gln Pro Gln Thr Trp Pro Gln Gly Ser Val
        275                 280                 285

Pro Pro Pro Glu Gln Ala Ser Gly Pro Ala Cys Ala Thr Glu Pro Gln
    290                 295                 300

Leu Ser Ser His Ala Ala Glu Ala Gly Ser Asp Pro Asp Lys Ala Leu
305                 310                 315                 320

Pro Glu Pro Val Ser Ala Gln Ser Ser Glu Asp Arg Ser Arg Glu Ala
                325                 330                 335

Ser Ala Gly Gly Leu Asp Leu Gly Glu Cys Glu Lys Arg Ala Gly Glu
            340                 345                 350

Met Leu Gly Met Trp Gly Ala Gly Ser Ser Leu Lys Val Thr Ile Leu
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355 360 365

Gln Ser Ser Asn Ser Arg Ala Phe Asn Thr Thr Pro Leu Thr Ser Gly
370 375 380

Pro Arg Pro Gly Asp Ser Thr Ser Ala Thr Pro Ala Ile Ala Ser Thr
385 390 395 400

Pro Ser Lys Gln Ser Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser
405 410 415

Ser Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu Ala Gln His
420 425 430

Gln Gln Arg Leu Gly Glu Ile Gln His Ser Ser Gln Thr Cys Leu Leu
435 440 445

Ser Leu Leu Pro Met Pro Arg Asp Ile Leu Glu Lys Glu Ala Glu Asp
450 455 460

Pro Pro Pro Lys Arg Trp Cys Asn Thr Cys Gln Val Tyr Tyr Val Gly
465 470 475 480

Asp Leu Ile Gln His Arg Arg Thr Gln Glu His Lys Val Ala Lys Gln
485 490 495

Ser Leu Arg Pro Phe Cys Thr Ile Cys Asn Arg Tyr Phe Lys Thr Pro
500 505 510

Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys Asp Lys Ala
515 520 525

Gln Glu Leu Lys Thr Leu Glu Lys Glu Thr Gly Ser Pro Asp Glu Asp
530 535 540

His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Ser Gly Gln Glu
545 550 555 560

Glu Asp Glu Asp Asp Asp Glu Glu Glu Glu Glu Glu Gly Glu Ile Glu
565 570 575

Ala Glu Glu Glu Phe Cys Lys Gln Val Lys Pro Arg Glu Thr Ser Ser
580 585 590

```
Glu Gln Gly Lys Gly Ser Glu Thr Tyr Asn Pro Asn Thr Ala Tyr Gly
        595                 600                 605

Glu Asp Phe Leu Val Pro Val Met Gly Tyr Val Cys Gln Ile Cys His
    610                 615                 620

Lys Phe Tyr Asp Ser Asn Ser Glu Leu Arg Leu Ser His Cys Lys Ser
625                 630                 635                 640

Leu Ala His Phe Glu Asn Leu Gln Lys Tyr Lys Ala Lys Asn Pro Ser
                645                 650                 655

Pro Pro Pro Thr Arg Pro Val Ser Arg Lys Cys Ala Ile Asn Ala Arg
            660                 665                 670

Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser His Gln Pro Ser Pro Gln
        675                 680                 685

Asp Thr Val Lys Met Pro Ser Lys Val Lys Pro Gly Ser Pro Gly Leu
    690                 695                 700

Pro Pro Pro Leu Arg Arg Ser Thr Arg Leu Lys Thr
705                 710                 715
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<210> 28
<211> 714
<212> PRT
<213> Mouse

<400> 28

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Met Phe Asn Pro Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln
1               5                   10                  15

Gln Gln Leu Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln
            20                  25                  30

Gln Gln Ile Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
        35                  40                  45

Ala Ser Leu Ser Ile Pro Val Ser Arg Gly Leu Pro Gln Gln Ser Ser
    50                  55                  60
```

```
Pro Gln Gln Leu Leu Ser Leu Gln Gly Leu His Ser Thr Ser Leu Leu
65                  70                  75                  80

Asn Gly Pro Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
                85                  90                  95

Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Gly Ala Ser Leu
            100                 105                 110

Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Ala Phe Asn Val Thr
        115                 120                 125

Ala Pro Ser Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Met Val Thr
    130                 135                 140

Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu
145                 150                 155                 160

Gly Pro Pro Pro Val Gly Val Pro Ile Asn Pro Ser Gln Leu Asn His
                165                 170                 175

Ser Gly Arg Asn Thr Gln Lys Gln Ala Arg Thr Pro Ser Ser Thr Thr
            180                 185                 190

Pro Asn Arg Lys Thr Val Pro Leu Glu Asp Arg Glu Asp Pro Thr Glu
        195                 200                 205

Gly Ser Glu Glu Ala Thr Glu Leu Gln Met Asp Thr Cys Glu Asp Gln
    210                 215                 220

Asp Ser Leu Val Gly Pro Asp Ser Met Leu Ser Glu Pro Gln Val Pro
225                 230                 235                 240

Glu Pro Glu Pro Phe Glu Thr Leu Glu Pro Pro Ala Lys Arg Cys Arg
                245                 250                 255

Ser Ser Glu Glu Ser Thr Glu Lys Gly Pro Thr Gly Gln Pro Gln Ala
            260                 265                 270

Arg Val Gln Pro Gln Thr Gln Met Thr Ala Pro Lys Gln Thr Gln Thr
        275                 280                 285

Pro Asp Arg Leu Pro Glu Pro Pro Glu Val Gln Met Leu Pro Arg Ile
```

290 295 300

Gln Pro Gln Ala Leu Gln Ile Gln Thr Gln Pro Lys Leu Leu Arg Gln
305 310 315 320

Ala Gln Thr Gln Thr Ser Pro Glu His Leu Ala Pro Gln Gln Asp Gln
325 330 335

Val Pro Thr Gln Ala Gln Ser Gln Glu Gln Thr Ser Glu Lys Thr Gln
340 345 350

Asp Gln Pro Gln Thr Trp Pro Gln Gly Ser Val Pro Pro Pro Glu Gln
355 360 365

Ala Ser Gly Pro Ala Cys Ala Thr Glu Pro Gln Leu Ser Ser His Ala
370 375 380

Ala Glu Ala Gly Ser Asp Pro Asp Lys Ala Leu Pro Glu Pro Val Ser
385 390 395 400

Ala Gln Ser Ser Glu Asp Arg Ser Arg Glu Ala Ser Ala Gly Gly Leu
405 410 415

Asp Leu Gly Glu Cys Glu Lys Arg Ala Gly Glu Met Leu Gly Met Trp
420 425 430

Gly Ala Gly Ser Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asn Ser
435 440 445

Arg Ala Phe Asn Thr Thr Pro Leu Thr Ser Gly Pro Ser Pro Gly Asp
450 455 460

Ser Thr Ser Ala Thr Pro Ala Ile Ala Ser Thr Pro Ser Lys Gln Ser
465 470 475 480

Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser Ser Ser Ser Gln Gln
485 490 495

Glu Phe Gln Asp His Met Ser Glu Ala Gln His Gln Gln Arg Leu Gly
500 505 510

Glu Ile Gln His Ser Ser Gln Thr Cys Leu Leu Ser Leu Leu Pro Met
515 520 525

```
Pro Arg Asp Ile Leu Glu Lys Glu Ala Glu Asp Pro Pro Pro Lys Arg
    530                 535                 540

Trp Cys Asn Thr Cys Gln Val Tyr Tyr Val Gly Asp Leu Ile Gln His
545                 550                 555                 560

Arg Arg Thr Gln Glu His Lys Val Ala Lys Gln Ser Leu Arg Pro Phe
                565                 570                 575

Cys Thr Ile Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu
            580                 585                 590

His Val Lys Ser Gln Gly His Lys Asp Lys Ala Gln Glu Leu Lys Thr
        595                 600                 605

Leu Glu Lys Glu Thr Gly Ser Pro Asp Glu Asp His Phe Ile Thr Val
    610                 615                 620

Glu Ala Val Gly Cys Phe Glu Ser Gly Gln Glu Glu Asp Glu Asp Asp
625                 630                 635                 640

Asp Glu Glu Glu Glu Glu Glu Gly Glu Ile Glu Ala Glu Glu Glu Phe
                645                 650                 655

Cys Lys Gln Val Lys Pro Arg Glu Thr Ser Ser Glu Gln Gly Lys Gly
            660                 665                 670

Ser Glu Thr Tyr Asn Pro Asn Thr Ala Tyr Gly Glu Asp Phe Leu Val
        675                 680                 685

Pro Val Met Gly Tyr Val Cys Gln Ile Cys His Lys Phe Tyr Asp Ser
    690                 695                 700

Asn Ser Glu Leu Arg Leu Ser His Cys Lys
705                 710
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<210> 29
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<212> PRT
<213> Homo sapiens

<400> 29

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Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln
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Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
            20                  25                  30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
        35                  40                  45

Ala Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro
    50                  55                  60

Gln Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu
65                  70                  75                  80

Asn Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
                85                  90                  95

Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu
            100                 105                 110

Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala
        115                 120                 125

Ser Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr
    130                 135                 140

Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu
145                 150                 155                 160

Gly Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu
                165                 170                 175

Ser Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr
            180                 185                 190

Pro Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys
        195                 200                 205

Ser Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp
    210                 215                 220

Thr Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys
```

225 230 235 240

Glu Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu
245 250 255

Leu Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu
260 265 270

Pro Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr
275 280 285

Val Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu
290 295 300

Ala Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala
305 310 315 320

Gln Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln
325 330 335

Val Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu
340 345 350

His Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu
355 360 365

Ala Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His
370 375 380

Ser Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu
385 390 395 400

Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro
405 410 415

Arg Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr
420 425 430

Pro Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His
435 440 445

Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln
450 455 460

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Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro
465                 470                 475                 480

Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu
                485                 490                 495

Ala Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln
            500                 505                 510

Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val
        515                 520                 525

Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala
    530                 535                 540

Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala
545                 550                 555                 560

Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val
                565                 570                 575

Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln
            580                 585                 590

Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe
        595                 600                 605

Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile
    610                 615                 620

Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val Pro Arg
625                 630                 635                 640

Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys
                645                 650                 655

Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg
            660                 665                 670

Thr Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr
        675                 680                 685
```

Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val
690 695 700

Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu
705 710 715 720

Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala
725 730 735

Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp
740 745 750

Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser
755 760 765

Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro
770 775 780

Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile
785 790 795 800

Cys Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu
805 810 815

Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys
820 825 830

Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys
835 840 845

Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly
850 855 860

Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val
865 870 875 880

Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu
885 890 895

Lys Thr

<210> 30
<211> 898
<212> PRT
<213> Homo sapiens

<400> 30

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Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln
1               5                  10                  15

Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
            20                  25                  30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
        35                  40                  45

Ala Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro
    50                  55                  60

Gln Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu
65                  70                  75                  80

Asn Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
                85                  90                  95

Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu
            100                 105                 110

Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala
        115                 120                 125

Ser Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr
    130                 135                 140

Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu
145                 150                 155                 160

Gly Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu
                165                 170                 175

Ser Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr
            180                 185                 190

Pro Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys
        195                 200                 205
```

Ser Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp
210 215 220

Thr Pro Glu Asp Gln Asp Leu Leu Pro Cys Pro Glu Asp Ile Ala Lys
225 230 235 240

Glu Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu
245 250 255

Leu Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu
260 265 270

Pro Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr
275 280 285

Val Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu
290 295 300

Ala Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala
305 310 315 320

Gln Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln
325 330 335

Val Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu
340 345 350

His Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu
355 360 365

Ala Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His
370 375 380

Ser Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu
385 390 395 400

Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro
405 410 415

Arg Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr
420 425 430

```
Pro Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His
        435                 440                 445

Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln
    450                 455                 460

Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro
465                 470                 475                 480

Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu
                485                 490                 495

Ala Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln
            500                 505                 510

Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val
        515                 520                 525

Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala
    530                 535                 540

Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Gly Ser Asp Ser Arg Ala
545                 550                 555                 560

Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val
                565                 570                 575

Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln
            580                 585                 590

Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe
        595                 600                 605

Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile
    610                 615                 620

Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val Pro Arg
625                 630                 635                 640

Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys
                645                 650                 655
```

```
Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg
            660                 665                 670

Thr Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr
        675                 680                 685

Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val
    690                 695                 700

Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu
705                 710                 715                 720

Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala
                725                 730                 735

Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp
            740                 745                 750

Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser
        755                 760                 765

Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro
    770                 775                 780

Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile
785                 790                 795                 800

Cys Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu
                805                 810                 815

Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys
            820                 825                 830

Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys
        835                 840                 845

Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly
    850                 855                 860

Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val
865                 870                 875                 880

Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu
```

885 890 895

Lys Thr

<210> 31
<211> 896
<212> PRT
<213> Homo sapiens

<400> 31

Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu Gln
1 5 10 15

Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln
20 25 30

Ser Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala Pro
35 40 45

Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln Gln
50 55 60

Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn Gly
65 70 75 80

Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu Asp
85 90 95

Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr Met
100 105 110

Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser Pro
115 120 125

Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro Asn
130 135 140

Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly Pro
145 150 155 160

Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser Gly
165 170 175

```
Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro Asn
            180                 185                 190

Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser Asp
        195                 200                 205

Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr Pro
    210                 215                 220

Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu Lys
225                 230                 235                 240

Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu Pro
                245                 250                 255

Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro Pro
            260                 265                 270

Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val Pro
        275                 280                 285

Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala Gln
    290                 295                 300

Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln Val
305                 310                 315                 320

Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val Gln
                325                 330                 335

Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His Leu
            340                 345                 350

Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala Glu
        355                 360                 365

Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln
    370                 375                 380

Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys Gln
385                 390                 395                 400
```

Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro Arg Gln
405 410 415

Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr Pro Gln
420 425 430

Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His Pro Pro
435 440 445

Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln Pro His
450 455 460

Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro Val Val
465 470 475 480

Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu Ala Gly
485 490 495

Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln Val Ser
500 505 510

Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val Gly Glu
515 520 525

Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala Gly Gly
530 535 540

Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala Phe Ser
545 550 555 560

Thr Val Pro Leu Thr Leu Val Pro Arg Pro Ser Asp Ser Val Ser Ser
565 570 575

Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln Phe Phe
580 585 590

Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe Gln Asp
595 600 605

His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile Gln His
610 615 620

Met Ser Gln Ala Cys Leu Leu Pro Leu Leu Pro Val Pro Arg Asp Val

625 630 635 640

Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys Asn Thr
645 650 655

Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg Thr Gln
660 665 670

Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr Val Cys
675 680 685

Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val Lys Ser
690 695 700

Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu Lys Glu
705 710 715 720

Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Gly Ala Val Gly
725 730 735

Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp Glu Glu
740 745 750

Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser Arg Asp
755 760 765

Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro Asn Thr
770 775 780

Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile Cys Arg
785 790 795 800

Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu Ser His
805 810 815

Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys Ala Ala
820 825 830

Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys Ala Ile
835 840 845

Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly Arg Pro
850 855 860

```
Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val Thr Ala
865                 870                 875                 880

Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu Lys Thr
                885                 890                 895
```

<210> 32
<211> 842
<212> PRT
<213> Homo sapiens

<400> 32

```
Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln
1               5                   10                  15

Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
            20                  25                  30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
        35                  40                  45

Ala Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro
    50                  55                  60

Gln Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu
65                  70                  75                  80

Asn Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
                85                  90                  95

Leu Asp Gln Phe Val Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu
            100                 105                 110

Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala
        115                 120                 125

Ser Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr
    130                 135                 140

Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu
145                 150                 155                 160
```

```
Gly Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu
                165                 170                 175

Ser Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr
            180                 185                 190

Pro Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys
        195                 200                 205

Ser Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp
    210                 215                 220

Thr Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys
225                 230                 235                 240

Glu Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu
                245                 250                 255

Leu Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu
            260                 265                 270

Pro Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr
        275                 280                 285

Val Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu
    290                 295                 300

Ala Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala
305                 310                 315                 320

Gln Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln
                325                 330                 335

Val Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu
            340                 345                 350

His Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu
        355                 360                 365

Ala Glu Pro Gln Lys Gln Val Gln Pro Gln Val His Thr Gln Ala Gln
    370                 375                 380

Pro Ser Val Gln Pro Gln Glu His Pro Pro Ala Gln Val Ser Val Gln
```

385 390 395 400

Pro Pro Glu Gln Thr His Glu Gln Pro His Thr Gln Pro Gln Val Ser
405 410 415

Leu Leu Ala Pro Glu Gln Thr Pro Val Val Val His Val Cys Gly Leu
420 425 430

Glu Met Pro Pro Asp Ala Val Glu Ala Gly Gly Gly Met Glu Lys Thr
435 440 445

Leu Pro Glu Pro Val Gly Thr Gln Val Ser Met Glu Glu Ile Gln Asn
450 455 460

Glu Ser Ala Cys Gly Leu Asp Val Gly Glu Cys Glu Asn Arg Ala Arg
465 470 475 480

Glu Met Pro Gly Val Trp Gly Ala Gly Gly Ser Leu Lys Val Thr Ile
485 490 495

Leu Gln Ser Ser Asp Ser Arg Ala Phe Ser Thr Val Pro Leu Thr Pro
500 505 510

Val Pro Arg Pro Ser Asp Ser Val Ser Ser Thr Pro Ala Ala Thr Ser
515 520 525

Thr Pro Ser Lys Gln Ala Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala
530 535 540

Ser Cys Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu Pro Gln
545 550 555 560

His Gln Gln Arg Leu Gly Glu Ile Gln His Met Ser Gln Ala Cys Leu
565 570 575

Leu Ser Leu Leu Pro Met Pro Arg Asp Val Leu Glu Thr Glu Asp Glu
580 585 590

Glu Pro Pro Pro Arg Arg Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met
595 600 605

Gly Asp Leu Ile Gln His Arg Arg Thr Gln Asp His Lys Val Ala Lys
610 615 620

```
Gln Pro Leu Arg Pro Phe Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr
625                 630                 635                 640

Pro Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys Asp Lys
                645                 650                 655

Ala Lys Glu Leu Lys Ser Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu
            660                 665                 670

Asp His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Gly Asp Glu
        675                 680                 685

Glu Glu Glu Glu Asp Asp Glu Asp Glu Glu Glu Ile Lys Val Glu Glu
    690                 695                 700

Glu Leu Cys Lys Gln Val Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp
705                 710                 715                 720

Lys Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe
                725                 730                 735

Leu Val Pro Val Met Gly Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr
            740                 745                 750

His Ser Asn Ser Gly Ala Gln Leu Ser His Cys Lys Ser Leu Gly His
        755                 760                 765

Phe Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr
    770                 775                 780

Thr Arg Pro Val Ser Arg Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu
785                 790                 795                 800

Thr Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr
                805                 810                 815

Gln Asp Lys Thr Pro Ser Lys Val Thr Ala Arg Pro Ser Gln Pro Pro
            820                 825                 830

Leu Pro Arg Arg Ser Thr Arg Leu Lys Thr
        835                 840
```

<210> 33
<211> 837
<212> PRT
<213> Homo sapiens

<400> 33

Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Ala
1 5 10 15

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
20 25 30

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
35 40 45

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
50 55 60

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
65 70 75 80

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
85 90 95

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
100 105 110

Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
115 120 125

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
130 135 140

Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
145 150 155 160

Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser
165 170 175

Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr
180 185 190

Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu

195 200 205

Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu
210 215 220

Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro
225 230 235 240

Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val
245 250 255

Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala
260 265 270

Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln
275 280 285

Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val
290 295 300

Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His
305 310 315 320

Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala
325 330 335

Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser
340 345 350

Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys
355 360 365

Gln Val Gln Pro Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro
370 375 380

Gln Glu His Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr
385 390 395 400

His Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu
405 410 415

Gln Thr Pro Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp
420 425 430

```
Ala Val Glu Ala Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val
        435                 440                 445

Gly Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly
    450                 455                 460

Leu Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val
465                 470                 475                 480

Trp Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp
                485                 490                 495

Ser Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser
            500                 505                 510

Asp Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln
        515                 520                 525

Ala Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln
    530                 535                 540

Gln Glu Phe Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu
545                 550                 555                 560

Gly Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro
                565                 570                 575

Val Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg
            580                 585                 590

Arg Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln
        595                 600                 605

His Arg Arg Thr Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro
    610                 615                 620

Phe Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val
625                 630                 635                 640

Glu His Val Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys
                645                 650                 655
```

Ser Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr
660 665 670

Val Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp
675 680 685

Asp Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln
690 695 700

Val Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr
705 710 715 720

Tyr Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met
725 730 735

Gly Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly
740 745 750

Ala Gln Leu Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln
755 760 765

Lys Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser
770 775 780

Arg Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr
785 790 795 800

Ser Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro
805 810 815

Ser Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser
820 825 830

Thr Arg Leu Lys Thr
835

<210> 34
<211> 818
<212> PRT
<213> Homo sapiens

<400> 34

Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln

```
1               5                   10                  15

Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
            20                  25                  30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
        35                  40                  45

Ala Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro
    50                  55                  60

Gln Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu
65                  70                  75                  80

Asn Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
                85                  90                  95

Asn Leu Arg Gly Tyr Gly Met Ala Ser Pro Gly Leu Ala Ala Pro Ser
            100                 105                 110

Leu Thr Pro Pro Gln Leu Ala Thr Pro Asn Leu Gln Gln Phe Phe Pro
        115                 120                 125

Gln Ala Thr Arg Gln Ser Leu Leu Gly Pro Pro Pro Val Gly Val Pro
    130                 135                 140

Met Asn Pro Ser Gln Phe Asn Leu Ser Gly Arg Asn Pro Gln Lys Gln
145                 150                 155                 160

Ala Arg Thr Ser Ser Ser Thr Thr Pro Asn Arg Lys Asp Ser Ser Ser
                165                 170                 175

Gln Thr Met Pro Val Glu Asp Lys Ser Asp Pro Pro Glu Gly Ser Glu
            180                 185                 190

Glu Ala Ala Glu Pro Arg Met Asp Thr Pro Glu Asp Gln Asp Leu Pro
        195                 200                 205

Pro Cys Pro Glu Asp Ile Ala Lys Glu Lys Arg Thr Pro Ala Pro Glu
    210                 215                 220

Pro Glu Pro Cys Glu Ala Ser Glu Leu Pro Ala Lys Arg Leu Arg Ser
225                 230                 235                 240
```

Ser Glu Glu Pro Thr Glu Lys Glu Pro Pro Gly Gln Leu Gln Val Lys
245 250 255

Ala Gln Pro Gln Ala Arg Met Thr Val Pro Lys Gln Thr Gln Thr Pro
260 265 270

Asp Leu Leu Pro Glu Ala Leu Glu Ala Gln Val Leu Pro Arg Phe Gln
275 280 285

Pro Arg Val Leu Gln Val Gln Ala Gln Val Gln Ser Gln Thr Gln Pro
290 295 300

Arg Ile Pro Ser Thr Asp Thr Gln Val Gln Pro Lys Leu Gln Lys Gln
305 310 315 320

Ala Gln Thr Gln Thr Ser Pro Glu His Leu Val Leu Gln Gln Lys Gln
325 330 335

Val Gln Pro Gln Leu Gln Gln Glu Ala Glu Pro Gln Lys Gln Val Gln
340 345 350

Pro Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His
355 360 365

Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln
370 375 380

Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro
385 390 395 400

Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu
405 410 415

Ala Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln
420 425 430

Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val
435 440 445

Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala
450 455 460

Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala
465 470 475 480

Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val
485 490 495

Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln
500 505 510

Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe
515 520 525

Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile
530 535 540

Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val Pro Arg
545 550 555 560

Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys
565 570 575

Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg
580 585 590

Thr Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr
595 600 605

Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val
610 615 620

Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu
625 630 635 640

Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala
645 650 655

Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp
660 665 670

Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser
675 680 685

```
Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro
    690                 695                 700

Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile
705                 710                 715                 720

Cys Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu
                725                 730                 735

Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys
            740                 745                 750

Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys
        755                 760                 765

Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly
    770                 775                 780

Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val
785                 790                 795                 800

Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu
                805                 810                 815

Lys Thr
```

<210> 35
<211> 820
<212> PRT
<213> Homo sapiens

<400> 35

```
Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
1               5                   10                  15

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
            20                  25                  30

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Asn
        35                  40                  45

Leu Arg Gly Tyr Gly Met Ala Ser Pro Gly Leu Ala Ala Pro Ser Leu
    50                  55                  60
```

```
Thr Pro Pro Gln Leu Ala Thr Pro Asn Leu Gln Gln Phe Phe Pro Gln
65                  70                  75                  80

Ala Thr Arg Gln Ser Leu Leu Gly Pro Pro Pro Val Gly Val Pro Met
                85                  90                  95

Asn Pro Ser Gln Phe Asn Leu Ser Gly Arg Asn Pro Gln Lys Gln Ala
            100                 105                 110

Arg Thr Ser Ser Ser Thr Thr Pro Asn Arg Lys Thr Met Pro Val Glu
        115                 120                 125

Asp Lys Ser Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg
    130                 135                 140

Met Asp Thr Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile
145                 150                 155                 160

Ala Lys Glu Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala
                165                 170                 175

Ser Glu Leu Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu
            180                 185                 190

Lys Glu Pro Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg
        195                 200                 205

Met Thr Val Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala
    210                 215                 220

Leu Glu Ala Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val
225                 230                 235                 240

Gln Ala Gln Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp
                245                 250                 255

Thr Gln Val Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser
            260                 265                 270

Pro Glu His Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln
        275                 280                 285
```

```
Gln Glu Ala Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln
    290                 295                 300

Ala His Ser Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu
305                 310                 315                 320

Pro Leu Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln
                325                 330                 335

Pro Pro Arg Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln
            340                 345                 350

Thr Tyr Pro Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln
        355                 360                 365

Glu His Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His
    370                 375                 380

Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln
385                 390                 395                 400

Thr Pro Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala
                405                 410                 415

Val Glu Ala Gly Gly Ser Met Glu Lys Thr Leu Pro Glu Pro Val Gly
            420                 425                 430

Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu
        435                 440                 445

Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp
    450                 455                 460

Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser
465                 470                 475                 480

Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp
                485                 490                 495

Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala
            500                 505                 510
```

Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln
515 520 525

Glu Phe Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly
530 535 540

Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val
545 550 555 560

Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg
565 570 575

Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His
580 585 590

Arg Arg Thr Gln Asp His Arg Ile Ala Lys Gln Ser Leu Arg Pro Phe
595 600 605

Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu
610 615 620

His Val Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser
625 630 635 640

Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val
645 650 655

Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp
660 665 670

Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val
675 680 685

Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr
690 695 700

Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly
705 710 715 720

Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His Asn Asn Ser Gly Ala
725 730 735

Gln Leu Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys

740 745 750

Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg
755 760 765

Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser
770 775 780

Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser
785 790 795 800

Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr
805 810 815

Arg Leu Lys Thr
820

<210> 36
<211> 414
<212> PRT
<213> Homo sapiens

<400> 36

Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln
1 5 10 15

Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
20 25 30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
35 40 45

Ala Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro
50 55 60

Gln Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu
65 70 75 80

Asn Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly
85 90 95

Asn Leu Arg Gly Tyr Gly Met Ala Ser Pro Gly Leu Ala Ala Pro Ser
100 105 110

```
Leu Thr Pro Pro Gln Leu Ala Thr Pro Asn Leu Gln Gln Phe Phe Pro
        115                 120                 125

Gln Ala Thr Arg Gln Ser Leu Leu Gly Pro Pro Pro Val Gly Val Pro
    130                 135                 140

Met Asn Pro Ser Gln Phe Asn Leu Ser Gly Arg Asn Pro Gln Lys Gln
145                 150                 155                 160

Ala Arg Thr Ser Ser Ser Thr Thr Pro Asn Arg Lys Asp Ser Ser Ser
                165                 170                 175

Gln Thr Met Pro Val Glu Asp Lys Ser Asp Pro Pro Glu Gly Ser Glu
            180                 185                 190

Glu Ala Ala Glu Pro Arg Met Asp Thr Pro Glu Asp Gln Asp Leu Pro
        195                 200                 205

Pro Cys Pro Glu Asp Ile Ala Lys Glu Lys Arg Thr Pro Ala Pro Glu
    210                 215                 220

Pro Glu Pro Cys Glu Ala Ser Glu Leu Pro Ala Lys Arg Leu Arg Ser
225                 230                 235                 240

Ser Glu Glu Pro Thr Glu Lys Glu Pro Pro Gly Gln Leu Gln Val Lys
                245                 250                 255

Ala Gln Pro Gln Ala Arg Met Thr Val Pro Lys Gln Thr Gln Thr Pro
            260                 265                 270

Asp Leu Leu Pro Glu Ala Leu Glu Ala Gln Val Leu Pro Arg Phe Gln
        275                 280                 285

Pro Arg Val Leu Gln Val Gln Ala Gln Val Gln Ser Gln Thr Gln Pro
    290                 295                 300

Arg Ile Pro Ser Thr Asp Thr Gln Val Gln Pro Lys Leu Gln Lys Gln
305                 310                 315                 320

Ala Gln Thr Gln Thr Ser Pro Glu His Leu Val Leu Gln Gln Lys Gln
                325                 330                 335
```

```
Val Gln Pro Gln Leu Gln Gln Glu Ala Glu Pro Gln Lys Gln Val Gln
            340                 345                 350

Pro Gln Val Gln Pro Gln Ala His Ser Gln Gly Pro Arg Gln Val Gln
        355                 360                 365

Leu Gln Gln Glu Ala Glu Pro Leu Lys Gln Val Gln Pro Gln Val Gln
    370                 375                 380

Pro Gln Ala His Ser Gln Pro His Leu Pro Gln Val Leu Ser Gln Gln
385                 390                 395                 400

Leu Arg Gly Thr Ala Leu Pro Leu Gln Val Pro Gly Pro Leu
                405                 410
```

<210> 37
<211> 75
<212> PRT
<213> Homo sapiens

<400> 37

```
Leu Gln Gln Gln Gln Gln Gln Leu Gln Gln Leu Gln Gln Gln Gln Leu
1               5                   10                  15

Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Leu Gln Leu Gln Gln Leu
            20                  25                  30

Leu Gln Gln Ser Pro Pro Gln Ala Pro Leu Pro Met Ala Val Ser Arg
        35                  40                  45

Gly Leu Pro Pro Gln Gln Pro Gln Gln Pro Leu Leu Asn Leu Gln Gly
    50                  55                  60

Thr Asn Ser Ala Ser Leu Leu Asn Gly Ser Met
65                  70                  75
```

<210> 38
<211> 33
<212> PRT
<213> Homo sapiens

<400> 38

```
Gln Gln Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu
1               5                   10                  15
```

Gln Gln Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro
20 25 30

Pro

<210> 39
<211> 52
<212> PRT
<213> Homo sapiens

<400> 39

Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln
1 5 10 15

Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
20 25 30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
35 40 45

Ala Pro Leu Pro
50

<210> 40
<211> 26
<212> PRT
<213> Homo sapiens

<400> 40

Pro Pro Thr Pro Arg Arg Asp Val Phe Ala His Val Pro Val Gln Gly
1 5 10 15

Trp Ser Thr Ala Arg Leu Val Thr Asp Met
20 25

<210> 41
<211> 24
<212> PRT
<213> Homo sapiens

<400> 41

Gly Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly
1 5 10 15

```
Leu Thr Met Pro Thr Ala Thr Leu
            20


<210>  42
<211>  56
<212>  PRT
<213>  Homo sapiens

<400>  42

Pro Gln Val Gln Pro Gln Ala His Ser Gln Gly Pro Arg Gln Val Gln
1               5                   10                  15


Leu Gln Gln Glu Ala Glu Pro Leu Lys Gln Val Gln Pro Gln Val Gln
            20                  25                  30


Pro Gln Ala His Ser Gln Pro Pro Arg Gln Val Gln Leu Gln Leu Gln
        35                  40                  45


Lys Gln Val Gln Thr Gln Thr Tyr
    50                  55


<210>  43
<211>  28
<212>  PRT
<213>  Homo sapiens

<400>  43

Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro Arg Gln Val Gln
1               5                   10                  15


Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr
            20                  25


<210>  44
<211>  112
<212>  PRT
<213>  Homo sapiens

<400>  44

Gln Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln
1               5                   10                  15


Val Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu
            20                  25                  30
```

His Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu
35 40 45

Ala Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His
50 55 60

Ser Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu
65 70 75 80

Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro
85 90 95

Arg Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr
100 105 110

<210> 45
<211> 2687
<212> DNA
<213> Mouse

<400> 45
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gcagcagctc cagcagcagc agctccagca gcagcaacag cagatactgc agctccaaca 120

gctgctgcaa cagtccccac cacaggcctc cttgtccatt cctgtcagcc ggggcctccc 180

ccagcagtca tccccgcaac agcttctgag tctccagggc ctccactcga cctccctgct 240

caatggcccc atgctgcaaa gagctttgct cctacagcag ttgcaaggac tggaccagtt 300

tgcaatgcca ccagccacgt atgacggtgc cagcctcacc atgcctacgg caacactggg 360

taacctccgt gctttcaatg tgacagcccc aagcctagca gctcccagcc ttacaccacc 420

ccagatggtc accccaaatc tgcagcagtt ctttccccag gctactcgac agtctctgct 480

ggggcctcct cctgttgggg tcccaataaa ccccttctcag ctcaaccact cagggaggaa 540

cacccagaaa caggccagaa ccccctcttc caccaccccc aatcgcaagg attcttcttc 600

tcagacggtg cctctggaag acagggaaga ccccacagag gggtctgagg aagccacgga 660

gctccagatg gacacatgtg aagaccaaga ttcactagtc ggtccagata gcatgctgag 720

tgagccccaa gtgcctgagc ctgagccctt tgagacattg gaaccaccag ccaagaggtg 780

caggagctca gaggagtcca ccgagaaagg ccctacaggg cagccacaag caagggtcca 840

gcctcagacc cagatgacag caccaaagca gacacagacc ccggatcggc tgcctgagcc 900

accagaagtc caaatgctgc cgcgtatcca gccacaggca ctgcagatcc agacccagcc 960

aaagctgctg aggcaggcac agacacagac ctctccagag cacttagcgc cccagcagga 1020

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cccaccgaac caagctcagg cacagaccca gcctcagccc ctctggcagg cgcagtcaca 1140

gaagcaggcc cagacacagg cacatccaca ggtacccacc caagcacagt cacaggagca 1200

gacatcagag aagacccagg accagcctca gacctggcca caggggtcag tacccccacc 1260

agaacaagcg tcaggtccag cctgtgccac ggaaccacag ctatcctctc acgctgcaga 1320

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caggagccgg gaggcgtccg ctggtggcct ggatttggga gaatgtgaaa agagagcggg 1440

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caacagccgg gcctttaaca ccacacccct cacatctgga cctcgccctg gggactctac 1560

ctctgccacc cctgccattg ccagcacacc ctccaagcaa agcctccagt tcttctgcta 1620

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gcaccaacag cggcttgggg aaatacaaca ctcgagccag acctgcctgc tgtccctgct 1740

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caacacctgc caggtgtact acgtgggaga cttgatccag caccgtagga cacaggagca 1860

caaggttgcc aaacaatccc tgaggccctt ctgcaccata tgcaaccgtt acttcaagac 1920

ccctcgaaag tttgtggagc acgtgaagtc ccagggacac aaggacaagg cccaagagct 1980

gaagacactt gaaaaggaga caggcagccc agatgaggac cacttcatca ctgtggacgc 2040

cgtcggttgc tttgagagtg gtcaagaaga ggacgaggat gacgacgagg aagaagaaga 2100

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ctcagagcaa gggaagggct ctgagacgta caaccccaac acagcctatg gtgaggattt 2220

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agaattgcgg ctttctcact gcaagtccct ggcccacttt gagaacctgc agaaatacaa 2340

agccaagaac ccaagccctc ctcctacccg gcctgtgagc cgcaagtgtg ccatcaacgc 2400

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gaaaatgccc agcaaggtga agcctggatc ccccggactc cctcctcccc ttcggcgctc 2520

aacacgcctc aaaacctgat agagggagct ctggccactc agcctgacta aggctcagtc 2580

tgctaatgct tcctaggtat ctgtgtagaa atgttcaagt ggttggtgtt tttactcaaa 2640

atccaataaa gagtcagtag tttggcaaaa aaaaaaaaaa aaaaaaa 2687

<210> 46
<211> 2922
<212> DNA
<213> Homo sapiens

<400> 46
tgggggctgc ggggccggcc catccgtggg ggcgacttga gcgttgaggg cgcgcgggga 60

ggcgagccac catgttcagc cagcagcagc agcagctcca gcaacagcag cagcagctcc 120

agcagttaca gcagcagcag ctccagcagc agcaattgca gcagcagcag ttactgcagc 180

tccagcagct gctccagcag tccccaccac aggccccgtt gcccatggct gtcagccggg 240

ggctcccccc gcagcagcca cagcagccgc ttctgaatct ccagggcacc aactcagcct 300

ccctcctcaa cggctccatg ctgcagagag ctttgctttt acagcagttg caaggactgg 360

accagtttgc aatgccacca gccacgtatg acactgccgg tctcaccatg cccacagcaa 420

cactgggtaa cctccgaggc tatggcatgg catccccagg cctcgcagcc cccagcctca 480

caccccaca actggccact ccaaatttgc aacagttctt tccccaggcc actcgccagt 540

ccttgctggg acctcctcct gttggggtcc ccatgaaccc ttcccagttc aacctttcag 600

gacggaaccc ccagaaacag gcccggacct cctcctctac cacccccaat cgaaaggatt 660

cttcttctca gacaatgcct gtggaagaca agtcagaccc cccagagggg tctgaggaag 720

ccgcagagcc ccggatggac acaccagaag accaagattt accgccctgc ccagaggaca 780

tcgccaagga aaaacgcact ccagcacctg agcctgagcc ttgtgaggcg tccgagctgc 840

cagcaaagag attgaggagc tcagaagagc ccacagagaa ggaacctcca gggcagttac 900

aggtgaaggc ccagccgcag gcccggatga cagtaccgaa acagacacag acaccagacc 960

tgctgcctga ggccctggaa gcccaagtgc tgccacgatt ccagccacgg gtcctgcagg 1020

tccaggccca ggtgcagtca cagactcagc cgcggatacc atccacagac acccaggtgc 1080

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aggtacagcc acaggcacat tcacagggcc caaggcaggt gcagctgcag caggaggcag 1260

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cctgccagct ctactacatg ggggacctga tccaacaccg caggacacag gaccacaaga 2100

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gcaagtttgt ggagcacgtg aagtcccagg ggcataagga caaagccaag gagctgaagt 2220

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gctatatctg ccgcatctgc cacaagttct atcacagcaa ctcaggggca cagctctccc 2520

actgcaagtc cctgggccac tttgagaacc tgcagaaata caaggcggcc aagaacccca 2580

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ccctgttcac ctccagcggc cgcccaccct cccagcccaa cacccaggac aaaacaccca 2700

gcaaggtgac ggctcgaccc tcccagcccc cactacctcg gcgctcaacc cgcctcaaaa 2760

cctgatagag ggacctccct gtccctggcc tgcctgggtc cagatctgct aatgcttttt 2820

aggagtctgc ctggaaactt tgacatggtt catgttttta ctcaaaatcc aataaaacaa 2880

ggtagtttgg ctgtgcaaaa aaaaaaaaaa aaaaaaaaaa aa 2922

<210> 47
<211> 897
<212> PRT
<213> Homo sapiens

<400> 47

```
Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu
1               5                  10                  15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
            20                  25                  30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
        35                  40                  45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
    50                  55                  60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65                  70                  75                  80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
                85                  90                  95

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
            100                 105                 110

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
        115                 120                 125

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
    130                 135                 140

Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
145                 150                 155                 160

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
                165                 170                 175

Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
            180                 185                 190

Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser
        195                 200                 205

Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr
    210                 215                 220
```

```
Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu
225                 230                 235                 240

Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu
                245                 250                 255

Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro
            260                 265                 270

Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val
        275                 280                 285

Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala
    290                 295                 300

Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln
305                 310                 315                 320

Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val
                325                 330                 335

Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His
            340                 345                 350

Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala
        355                 360                 365

Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser
    370                 375                 380

Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys
385                 390                 395                 400

Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro Arg
                405                 410                 415

Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr Pro
            420                 425                 430

Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His Pro
        435                 440                 445
```

```
Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln Pro
    450                 455                 460

His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro Val
465                 470                 475                 480

Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu Ala
                485                 490                 495

Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln Val
            500                 505                 510

Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val Gly
        515                 520                 525

Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala Gly
    530                 535                 540

Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala Phe
545                 550                 555                 560

Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val Ser
                565                 570                 575

Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln Phe
            580                 585                 590

Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe Gln
        595                 600                 605

Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile Gln
    610                 615                 620

His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val Pro Arg Asp
625                 630                 635                 640

Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys Asn
                645                 650                 655

Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg Thr
            660                 665                 670

Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr Val
```

675 680 685

Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val Lys
690 695 700

Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu Lys
705 710 715 720

Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala Val
725 730 735

Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp Glu
740 745 750

Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser Arg
755 760 765

Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro Asn
770 775 780

Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile Cys
785 790 795 800

Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu Ser
805 810 815

His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys Ala
820 825 830

Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys Ala
835 840 845

Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly Arg
850 855 860

Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val Thr
865 870 875 880

Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu Lys
885 890 895

Thr

<210> 48
<211> 49
<212> PRT
<213> Homo sapiens

<400> 48

Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln
1 5 10 15

Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln
20 25 30

Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln
35 40 45

Ala

<210> 49
<211> 215
<212> DNA
<213> Homo sapiens

<400> 49
tgggggctgc ggggccggcc catccgtggg ggcgacttga gcgttgaggg cgcgcgggga 60

ggcgagccac catgttcagc cagcagcagc agcagctcca gcaacagcag cagcagctcc 120

agcagttaca gcagcagcag ctccagcagc agcaattgca gcagcagcag ttactgcagc 180

tccagcagct gctccagcag tccccaccac aggcc 215

<210> 50
<211> 101
<212> DNA
<213> Homo sapiens

<400> 50
cagcagctcc agcagttaca gcagcagcag ctccagcagc agcaattgca gcagcagcag 60

ttactgcagc tccagcagct gctccagcag tccccaccac a 101

<210> 51
<211> 72
<212> DNA
<213> Homo sapiens

<400> 51

ggactggacc agtttgcaat gccaccagcc acgtatgaca ctgccggtct caccatgccc 60

acagcaacac tg 72

<210> 52
<211> 15
<212> DNA
<213> Homo sapiens

<400> 52
aggattcttc ttctc 15

<210> 53
<211> 86
<212> DNA
<213> Homo sapiens

<400> 53
ccacaggtgc agccccaggc acattcacag cccccaaggc aggtgcagct gcagctgcag 60

aagcaggtcc agacacagac atatcc 86

<210> 54
<211> 168
<212> DNA
<213> Homo sapiens

<400> 54
ccacaggtac agccacaggc acattcacag ggcccaaggc aggtgcagct gcagcaggag 60

gcagagccgc tgaagcaggt gcagccacag gtgcagcccc aggcacattc acagccccca 120

aggcaggtgc agctgcagct gcagaagcag gtccagacac agacatat 168

<210> 55
<211> 336
<212> DNA
<213> Homo sapiens

<400> 55
caggtgcagt cacagactca gccgcggata ccatccacag acacccaggt gcagccaaag 60

ctgcagaagc aggcgcaaac acagacctct ccagagcact tagtgctgca acagaagcag 120

gtgcagccac agctgcagca ggaggcagag ccacagaagc aggtgcagcc acaggtacag 180

ccacaggcac attcacaggg cccaaggcag gtgcagctgc agcaggaggc agagccgctg 240

aagcaggtgc agccacaggt gcagccccag gcacattcac agcccccaag gcaggtgcag 300

ctgcagctgc agaagcaggt ccagacacag acatat 336

<210> 56
<211> 24
<212> DNA
<213> Homo sapiens

<400> 56
gttgaggagg aactctgcaa gcag 24

<210> 57
<211> 78
<212> DNA
<213> Homo sapiens

<400> 57
gccacccaca ccacgaagag atgtgtttgc ccacgttcca gtgcaggggt ggagcacagc 60

ccggcttgtt acagatat 78

<210> 58
<211> 863
<212> PRT
<213> Homo sapiens

<400> 58

Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Ala Pro
1 5 10 15

Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln Gln
20 25 30

Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn Gly
35 40 45

Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu Asp
50 55 60

Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr Met
65 70 75 80

Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser Pro
85 90 95

Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro Asn
100 105 110

Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly Pro
115 120 125

```
Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser Gly
    130                 135                 140

Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro Asn
145                 150                 155                 160

Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser Asp
                165                 170                 175

Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr Pro
            180                 185                 190

Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu Lys
        195                 200                 205

Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu Pro
    210                 215                 220

Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro Pro
225                 230                 235                 240

Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val Pro
                245                 250                 255

Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala Gln
            260                 265                 270

Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln Val
        275                 280                 285

Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val Gln
    290                 295                 300

Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His Leu
305                 310                 315                 320

Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala Glu
                325                 330                 335

Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln
            340                 345                 350
```

```
Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys Gln
        355                 360                 365

Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro Arg Gln
    370                 375                 380

Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr Pro Gln
385                 390                 395                 400

Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His Pro Pro
                405                 410                 415

Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln Pro His
            420                 425                 430

Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro Val Val
        435                 440                 445

Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu Ala Gly
    450                 455                 460

Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln Val Ser
465                 470                 475                 480

Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val Gly Glu
                485                 490                 495

Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala Gly Gly
            500                 505                 510

Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala Phe Ser
        515                 520                 525

Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val Ser Ser
    530                 535                 540

Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln Phe Phe
545                 550                 555                 560

Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe Gln Asp
                565                 570                 575
```

```
His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile Gln His
            580                 585                 590

Met Ser Gln Ala Leu Leu Ser Leu Leu Pro Val Pro Arg Asp Val Leu
        595                 600                 605

Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys Asn Thr Cys
    610                 615                 620

Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg Thr Gln Asp
625                 630                 635                 640

His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr Val Cys Asn
                645                 650                 655

Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val Lys Ser Gln
            660                 665                 670

Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu Lys Glu Ile
        675                 680                 685

Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala Val Gly Cys
    690                 695                 700

Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp Glu Glu Glu
705                 710                 715                 720

Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser Arg Asp Ile
                725                 730                 735

Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala
            740                 745                 750

Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile Cys Arg Ile
        755                 760                 765

Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu Ser His Cys
    770                 775                 780

Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys
785                 790                 795                 800

Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys Ala Ile Asn
```

805 810 815

Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro
820 825 830

Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val Thr Ala Arg
835 840 845

Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu Lys Thr
850 855 860

<210> 59
<211> 873
<212> PRT
<213> Homo sapiens

<400> 59

Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu
1 5 10 15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
20 25 30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
35 40 45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
50 55 60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65 70 75 80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Asn
85 90 95

Leu Arg Gly Tyr Gly Met Ala Ser Pro Gly Leu Ala Ala Pro Ser Leu
100 105 110

Thr Pro Pro Gln Leu Ala Thr Pro Asn Leu Gln Gln Phe Phe Pro Gln
115 120 125

Ala Thr Arg Gln Ser Leu Leu Gly Pro Pro Pro Val Gly Val Pro Met
130 135 140

```
Asn Pro Ser Gln Phe Asn Leu Ser Gly Arg Asn Pro Gln Lys Gln Ala
145                 150                 155                 160

Arg Thr Ser Ser Ser Thr Thr Pro Asn Arg Lys Asp Ser Ser Ser Gln
                165                 170                 175

Thr Met Pro Val Glu Asp Lys Ser Asp Pro Pro Glu Gly Ser Glu Glu
            180                 185                 190

Ala Ala Glu Pro Arg Met Asp Thr Pro Glu Asp Gln Asp Leu Pro Pro
        195                 200                 205

Cys Pro Glu Asp Ile Ala Lys Glu Lys Arg Thr Pro Ala Pro Glu Pro
    210                 215                 220

Glu Pro Cys Glu Ala Ser Glu Leu Pro Ala Lys Arg Leu Arg Ser Ser
225                 230                 235                 240

Glu Glu Pro Thr Glu Lys Glu Pro Pro Gly Gln Leu Gln Val Lys Ala
                245                 250                 255

Gln Pro Gln Ala Arg Met Thr Val Pro Lys Gln Thr Gln Thr Pro Asp
            260                 265                 270

Leu Leu Pro Glu Ala Leu Glu Ala Gln Val Leu Pro Arg Phe Gln Pro
        275                 280                 285

Arg Val Leu Gln Val Gln Ala Gln Val Gln Ser Gln Thr Gln Pro Arg
    290                 295                 300

Ile Pro Ser Thr Asp Thr Gln Val Gln Pro Lys Leu Gln Lys Gln Ala
305                 310                 315                 320

Gln Thr Gln Thr Ser Pro Glu His Leu Val Leu Gln Gln Lys Gln Val
                325                 330                 335

Gln Pro Gln Leu Gln Gln Glu Ala Glu Pro Gln Lys Gln Val Gln Pro
            340                 345                 350

Gln Val Gln Pro Gln Ala His Ser Gln Gly Pro Arg Gln Val Gln Leu
        355                 360                 365
```

```
Gln Gln Glu Ala Glu Pro Leu Lys Gln Val Gln Pro Gln Val Gln Pro
    370                 375                 380

Gln Ala His Ser Gln Pro Pro Arg Gln Val Gln Leu Gln Leu Gln Lys
385                 390                 395                 400

Gln Val Gln Thr Gln Thr Tyr Pro Gln Val His Thr Gln Ala Gln Pro
                405                 410                 415

Ser Val Gln Pro Gln Glu His Pro Pro Ala Gln Val Ser Val Gln Pro
            420                 425                 430

Pro Glu Gln Thr His Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu
        435                 440                 445

Leu Ala Pro Glu Gln Thr Pro Val Val Val His Val Cys Gly Leu Glu
    450                 455                 460

Met Pro Pro Asp Ala Val Glu Ala Gly Gly Gly Met Glu Lys Thr Leu
465                 470                 475                 480

Pro Glu Pro Val Gly Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu
                485                 490                 495

Ser Ala Cys Gly Leu Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu
            500                 505                 510

Met Pro Gly Val Trp Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu
        515                 520                 525

Gln Ser Ser Asp Ser Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val
    530                 535                 540

Pro Arg Pro Ser Asp Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr
545                 550                 555                 560

Pro Ser Lys Gln Ala Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser
                565                 570                 575

Cys Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu Pro Gln His
            580                 585                 590

Gln Gln Arg Leu Gly Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu
```

595 600 605

Ser Leu Leu Pro Val Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu
610 615 620

Pro Pro Pro Arg Arg Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly
625 630 635 640

Asp Leu Ile Gln His Arg Arg Thr Gln Asp His Lys Ile Ala Lys Gln
645 650 655

Ser Leu Arg Pro Phe Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro
660 665 670

Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys Asp Lys Ala
675 680 685

Lys Glu Leu Lys Ser Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp
690 695 700

His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu
705 710 715 720

Glu Glu Glu Asp Asp Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu
725 730 735

Leu Cys Lys Gln Val Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys
740 745 750

Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu
755 760 765

Val Pro Val Met Gly Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His
770 775 780

Ser Asn Ser Gly Ala Gln Leu Ser His Cys Lys Ser Leu Gly His Phe
785 790 795 800

Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr
805 810 815

Arg Pro Val Ser Arg Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr
820 825 830

```
Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln
        835                 840                 845

Asp Lys Thr Pro Ser Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu
    850                 855                 860

Pro Arg Arg Ser Thr Arg Leu Lys Thr
865                 870
```

<210> 60
<211> 892
<212> PRT
<213> Homo sapiens

<400> 60

```
Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu
1               5                   10                  15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
            20                  25                  30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
        35                  40                  45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
    50                  55                  60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65                  70                  75                  80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
                85                  90                  95

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
            100                 105                 110

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
        115                 120                 125

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
    130                 135                 140
```

```
Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
145                 150                 155                 160

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
                165                 170                 175

Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
            180                 185                 190

Asn Arg Lys Thr Met Pro Val Glu Asp Lys Ser Asp Pro Pro Glu Gly
        195                 200                 205

Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr Pro Glu Asp Gln Asp
    210                 215                 220

Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu Lys Arg Thr Pro Ala
225                 230                 235                 240

Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu Pro Ala Lys Arg Leu
                245                 250                 255

Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro Pro Gly Gln Leu Gln
            260                 265                 270

Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val Pro Lys Gln Thr Gln
        275                 280                 285

Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala Gln Val Leu Pro Arg
    290                 295                 300

Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln Val Gln Ser Gln Thr
305                 310                 315                 320

Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val Gln Pro Lys Leu Gln
                325                 330                 335

Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His Leu Val Leu Gln Gln
            340                 345                 350

Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala Glu Pro Gln Lys Gln
        355                 360                 365

Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Gly Pro Arg Gln
```

370 375 380

Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys Gln Val Gln Pro Gln
385 390 395 400

Val Gln Pro Gln Ala His Ser Gln Pro Pro Arg Gln Val Gln Leu Gln
405 410 415

Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr Pro Gln Val His Thr Gln
420 425 430

Ala Gln Pro Ser Val Gln Pro Gln Glu His Pro Pro Ala Gln Val Ser
435 440 445

Val Gln Pro Pro Glu Gln Thr His Glu Gln Pro His Thr Gln Pro Gln
450 455 460

Val Ser Leu Leu Ala Pro Glu Gln Thr Pro Val Val Val His Val Cys
465 470 475 480

Gly Leu Glu Met Pro Pro Asp Ala Val Glu Ala Gly Gly Gly Met Glu
485 490 495

Lys Thr Leu Pro Glu Pro Val Gly Thr Gln Val Ser Met Glu Glu Ile
500 505 510

Gln Asn Glu Ser Ala Cys Gly Leu Asp Val Gly Glu Cys Glu Asn Arg
515 520 525

Ala Arg Glu Met Pro Gly Val Trp Gly Ala Gly Gly Ser Leu Lys Val
530 535 540

Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala Phe Ser Thr Val Pro Leu
545 550 555 560

Thr Pro Val Pro Arg Pro Ser Asp Ser Val Ser Ser Thr Pro Ala Ala
565 570 575

Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln Phe Phe Cys Tyr Ile Cys
580 585 590

Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu
595 600 605

```
Pro Gln His Gln Gln Arg Leu Gly Glu Ile Gln His Met Ser Gln Ala
    610                 615                 620

Cys Leu Leu Ser Leu Leu Pro Val Pro Arg Asp Val Leu Glu Thr Glu
625                 630                 635                 640

Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys Asn Thr Cys Gln Leu Tyr
                645                 650                 655

Tyr Met Gly Asp Leu Ile Gln His Arg Arg Thr Gln Asp His Lys Ile
            660                 665                 670

Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr Val Cys Asn Arg Tyr Phe
        675                 680                 685

Lys Thr Pro Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys
    690                 695                 700

Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu Lys Glu Ile Ala Gly Gln
705                 710                 715                 720

Asp Glu Asp His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Gly
                725                 730                 735

Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp Glu Glu Glu Ile Glu Val
            740                 745                 750

Glu Glu Glu Leu Cys Lys Gln Val Arg Ser Arg Asp Ile Ser Arg Glu
        755                 760                 765

Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala Tyr Gly Val
    770                 775                 780

Asp Phe Leu Val Pro Val Met Gly Tyr Ile Cys Arg Ile Cys His Lys
785                 790                 795                 800

Phe Tyr His Ser Asn Ser Gly Ala Gln Leu Ser His Cys Lys Ser Leu
                805                 810                 815

Gly His Phe Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys Asn Pro Ser
            820                 825                 830
```

```
Pro Thr Thr Arg Pro Val Ser Arg Arg Cys Ala Ile Asn Ala Arg Asn
        835                 840                 845

Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro Ser Gln Pro
    850                 855                 860

Asn Thr Gln Asp Lys Thr Pro Ser Lys Val Thr Ala Arg Pro Ser Gln
865                 870                 875                 880

Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu Lys Thr
                885                 890
```

<210> 61
<211> 868
<212> PRT
<213> Homo sapiens

<400> 61

```
Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Leu
1               5                   10                  15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
            20                  25                  30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
        35                  40                  45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
    50                  55                  60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65                  70                  75                  80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
                85                  90                  95

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
            100                 105                 110

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
        115                 120                 125

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
```

```
    130                 135                 140

Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
145                 150                 155                 160

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
                165                 170                 175

Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
            180                 185                 190

Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser
        195                 200                 205

Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr
    210                 215                 220

Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu
225                 230                 235                 240

Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu
                245                 250                 255

Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro
            260                 265                 270

Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val
        275                 280                 285

Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala
    290                 295                 300

Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln
305                 310                 315                 320

Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val
                325                 330                 335

Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His
            340                 345                 350

Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala
        355                 360                 365
```

```
Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser
    370                 375                 380

Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys
385                 390                 395                 400

Gln Val Gln Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln
                405                 410                 415

Glu His Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His
            420                 425                 430

Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln
        435                 440                 445

Thr Pro Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala
    450                 455                 460

Val Glu Ala Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly
465                 470                 475                 480

Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu
                485                 490                 495

Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp
            500                 505                 510

Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser
        515                 520                 525

Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp
    530                 535                 540

Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala
545                 550                 555                 560

Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln
                565                 570                 575

Glu Phe Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly
            580                 585                 590
```

```
Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val
        595                 600                 605

Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg
    610                 615                 620

Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His
625                 630                 635                 640

Arg Arg Thr Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe
                645                 650                 655

Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu
            660                 665                 670

His Val Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser
        675                 680                 685

Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val
    690                 695                 700

Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp
705                 710                 715                 720

Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val
                725                 730                 735

Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr
            740                 745                 750

Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly
        755                 760                 765

Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala
    770                 775                 780

Gln Leu Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys
785                 790                 795                 800

Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg
                805                 810                 815
```

```
Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser
            820                 825                 830

Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser
        835                 840                 845

Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr
    850                 855                 860

Arg Leu Lys Thr
865
```

<210> 62
<211> 841
<212> PRT
<213> Homo sapiens

<400> 62

```
Met Phe Ser Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Leu
1               5                   10                  15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
            20                  25                  30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
        35                  40                  45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
    50                  55                  60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65                  70                  75                  80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
                85                  90                  95

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
            100                 105                 110

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
        115                 120                 125

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
    130                 135                 140
```

```
Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
145                 150                 155                 160

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
                165                 170                 175

Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
            180                 185                 190

Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser
        195                 200                 205

Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr
    210                 215                 220

Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu
225                 230                 235                 240

Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu
                245                 250                 255

Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro
            260                 265                 270

Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val
        275                 280                 285

Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala
    290                 295                 300

Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln
305                 310                 315                 320

Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val
                325                 330                 335

Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His
            340                 345                 350

Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala
        355                 360                 365
```

```
Glu Pro Gln Lys Gln Val Gln Pro Gln Val His Thr Gln Ala Gln Pro
    370                 375                 380

Ser Val Gln Pro Gln Glu His Pro Pro Ala Gln Val Ser Val Gln Pro
385                 390                 395                 400

Pro Glu Gln Thr His Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu
                405                 410                 415

Leu Ala Pro Glu Gln Thr Pro Val Val Val His Val Cys Gly Leu Glu
            420                 425                 430

Met Pro Pro Asp Ala Val Glu Ala Gly Gly Gly Met Glu Lys Thr Leu
        435                 440                 445

Pro Glu Pro Val Gly Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu
    450                 455                 460

Ser Ala Cys Gly Leu Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu
465                 470                 475                 480

Met Pro Gly Val Trp Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu
                485                 490                 495

Gln Ser Ser Asp Ser Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val
            500                 505                 510

Pro Arg Pro Ser Asp Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr
        515                 520                 525

Pro Ser Lys Gln Ala Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser
    530                 535                 540

Cys Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu Pro Gln His
545                 550                 555                 560

Gln Gln Arg Leu Gly Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu
                565                 570                 575

Ser Leu Leu Pro Val Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu
            580                 585                 590
```

Pro Pro Pro Arg Arg Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly
595 600 605

Asp Leu Ile Gln His Arg Arg Thr Gln Asp His Lys Ile Ala Lys Gln
610 615 620

Ser Leu Arg Pro Phe Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro
625 630 635 640

Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys Asp Lys Ala
645 650 655

Lys Glu Leu Lys Ser Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp
660 665 670

His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu
675 680 685

Glu Glu Glu Asp Asp Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu
690 695 700

Leu Cys Lys Gln Val Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys
705 710 715 720

Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu
725 730 735

Val Pro Val Met Gly Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His
740 745 750

Ser Asn Ser Gly Ala Gln Leu Ser His Cys Lys Ser Leu Gly His Phe
755 760 765

Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr
770 775 780

Arg Pro Val Ser Arg Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr
785 790 795 800

Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln
805 810 815

Asp Lys Thr Pro Ser Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu

820 825 830

Pro Arg Arg Ser Thr Arg Leu Lys Thr
835 840

<210> 63
<211> 785
<212> PRT
<213> Homo sapiens

<400> 63

Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu
1 5 10 15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
20 25 30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
35 40 45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
50 55 60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65 70 75 80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
85 90 95

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
100 105 110

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
115 120 125

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
130 135 140

Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
145 150 155 160

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
165 170 175

```
Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
            180                 185                 190

Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser
        195                 200                 205

Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr
    210                 215                 220

Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu
225                 230                 235                 240

Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu
                245                 250                 255

Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro
            260                 265                 270

Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val
        275                 280                 285

Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala
    290                 295                 300

Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Pro
305                 310                 315                 320

Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His Pro
                325                 330                 335

Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln Pro
            340                 345                 350

His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro Val
        355                 360                 365

Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu Ala
    370                 375                 380

Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln Val
385                 390                 395                 400
```

Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val Gly
405 410 415

Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala Gly
420 425 430

Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala Phe
435 440 445

Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val Ser
450 455 460

Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln Phe
465 470 475 480

Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe Gln
485 490 495

Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile Gln
500 505 510

His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val Pro Arg Asp
515 520 525

Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys Asn
530 535 540

Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg Thr
545 550 555 560

Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr Val
565 570 575

Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val Lys
580 585 590

Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu Lys
595 600 605

Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala Val
610 615 620

Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp Glu

625 630 635 640

Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val Arg Ser Arg
645 650 655

Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr Ser Pro Asn
660 665 670

Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly Tyr Ile Cys
675 680 685

Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala Gln Leu Ser
690 695 700

His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys Tyr Lys Ala
705 710 715 720

Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg Arg Cys Ala
725 730 735

Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser Ser Gly Arg
740 745 750

Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser Lys Val Thr
755 760 765

Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr Arg Leu Lys
770 775 780

Thr
785

<210> 64
<211> 889
<212> PRT
<213> Homo sapiens

<400> 64

Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu
1 5 10 15

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
20 25 30

```
Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
        35                  40                  45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
    50                  55                  60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65                  70                  75                  80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Leu
                85                  90                  95

Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala Gly Leu Thr
            100                 105                 110

Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly Met Ala Ser
        115                 120                 125

Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu Ala Thr Pro
    130                 135                 140

Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser Leu Leu Gly
145                 150                 155                 160

Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe Asn Leu Ser
                165                 170                 175

Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser Thr Thr Pro
            180                 185                 190

Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu Asp Lys Ser
        195                 200                 205

Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg Met Asp Thr
    210                 215                 220

Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile Ala Lys Glu
225                 230                 235                 240

Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala Ser Glu Leu
                245                 250                 255
```

```
Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu Lys Glu Pro
            260                 265                 270

Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg Met Thr Val
        275                 280                 285

Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala Leu Glu Ala
    290                 295                 300

Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val Gln Ala Gln
305                 310                 315                 320

Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp Thr Gln Val
                325                 330                 335

Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser Pro Glu His
            340                 345                 350

Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln Gln Glu Ala
        355                 360                 365

Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser
    370                 375                 380

Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu Pro Leu Lys
385                 390                 395                 400

Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln Pro Pro Arg
                405                 410                 415

Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln Thr Tyr Pro
            420                 425                 430

Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln Glu His Pro
        435                 440                 445

Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His Glu Gln Pro
    450                 455                 460

His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln Thr Pro Val
465                 470                 475                 480

Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala Val Glu Ala
```

485 490 495

Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly Thr Gln Val
500 505 510

Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu Asp Val Gly
515 520 525

Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp Gly Ala Gly
530 535 540

Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser Arg Ala Phe
545 550 555 560

Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp Ser Val Ser
565 570 575

Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala Leu Gln Phe
580 585 590

Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln Glu Phe Gln
595 600 605

Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly Glu Ile Gln
610 615 620

His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val Pro Arg Asp
625 630 635 640

Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg Trp Cys Asn
645 650 655

Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His Arg Arg Thr
660 665 670

Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe Cys Thr Val
675 680 685

Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu His Val Lys
690 695 700

Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser Leu Glu Lys
705 710 715 720

```
Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val Asp Ala Val
                725                 730                 735

Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Glu Asp Asp Glu Asp Glu
            740                 745                 750

Glu Glu Ile Glu Val Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys
        755                 760                 765

Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu
    770                 775                 780

Val Pro Val Met Gly Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His
785                 790                 795                 800

Ser Asn Ser Gly Ala Gln Leu Ser His Cys Lys Ser Leu Gly His Phe
                805                 810                 815

Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr
            820                 825                 830

Arg Pro Val Ser Arg Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr
        835                 840                 845

Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln
    850                 855                 860

Asp Lys Thr Pro Ser Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu
865                 870                 875                 880

Pro Arg Arg Ser Thr Arg Leu Lys Thr
                885
```

<210> 65
<211> 873
<212> PRT
<213> Homo sapiens

<400> 65

```
Met Phe Ser Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Leu
1               5                   10                  15
```

```
Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln
            20                  25                  30

Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro Pro Gln Ala
        35                  40                  45

Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln Gln Pro Gln
    50                  55                  60

Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser Leu Leu Asn
65                  70                  75                  80

Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu Gln Gly Asn
                85                  90                  95

Leu Arg Gly Tyr Gly Met Ala Ser Pro Gly Leu Ala Ala Pro Ser Leu
            100                 105                 110

Thr Pro Pro Gln Leu Ala Thr Pro Asn Leu Gln Gln Phe Phe Pro Gln
        115                 120                 125

Ala Thr Arg Gln Ser Leu Leu Gly Pro Pro Pro Val Gly Val Pro Met
    130                 135                 140

Asn Pro Ser Gln Phe Asn Leu Ser Gly Arg Asn Pro Gln Lys Gln Ala
145                 150                 155                 160

Arg Thr Ser Ser Ser Thr Thr Pro Asn Arg Lys Asp Ser Ser Ser Gln
                165                 170                 175

Thr Met Pro Val Glu Asp Lys Ser Asp Pro Pro Glu Gly Ser Glu Glu
            180                 185                 190

Ala Ala Glu Pro Arg Met Asp Thr Pro Glu Asp Gln Asp Leu Pro Pro
        195                 200                 205

Cys Pro Glu Asp Ile Ala Lys Glu Lys Arg Thr Pro Ala Pro Glu Pro
    210                 215                 220

Glu Pro Cys Glu Ala Ser Glu Leu Pro Ala Lys Arg Leu Arg Ser Ser
225                 230                 235                 240

Glu Glu Pro Thr Glu Lys Glu Pro Pro Gly Gln Leu Gln Val Lys Ala
```

245 250 255

Gln Pro Gln Ala Arg Met Thr Val Pro Lys Gln Thr Gln Thr Pro Asp
260 265 270

Leu Leu Pro Glu Ala Leu Glu Ala Gln Val Leu Pro Arg Phe Gln Pro
275 280 285

Arg Val Leu Gln Val Gln Ala Gln Val Gln Ser Gln Thr Gln Pro Arg
290 295 300

Ile Pro Ser Thr Asp Thr Gln Val Gln Pro Lys Leu Gln Lys Gln Ala
305 310 315 320

Gln Thr Gln Thr Ser Pro Glu His Leu Val Leu Gln Gln Lys Gln Val
325 330 335

Gln Pro Gln Leu Gln Gln Glu Ala Glu Pro Gln Lys Gln Val Gln Pro
340 345 350

Gln Val Gln Pro Gln Ala His Ser Gln Gly Pro Arg Gln Val Gln Leu
355 360 365

Gln Gln Glu Ala Glu Pro Leu Lys Gln Val Gln Pro Gln Val Gln Pro
370 375 380

Gln Ala His Ser Gln Pro Pro Arg Gln Val Gln Leu Gln Leu Gln Lys
385 390 395 400

Gln Val Gln Thr Gln Thr Tyr Pro Gln Val His Thr Gln Ala Gln Pro
405 410 415

Ser Val Gln Pro Gln Glu His Pro Pro Ala Gln Val Ser Val Gln Pro
420 425 430

Pro Glu Gln Thr His Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu
435 440 445

Leu Ala Pro Glu Gln Thr Pro Val Val Val His Val Cys Gly Leu Glu
450 455 460

Met Pro Pro Asp Ala Val Glu Ala Gly Gly Gly Met Glu Lys Thr Leu
465 470 475 480

Pro Glu Pro Val Gly Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu
485 490 495

Ser Ala Cys Gly Leu Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu
500 505 510

Met Pro Gly Val Trp Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu
515 520 525

Gln Ser Ser Asp Ser Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val
530 535 540

Pro Arg Pro Ser Asp Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr
545 550 555 560

Pro Ser Lys Gln Ala Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser
565 570 575

Cys Ser Ser Gln Gln Glu Phe Gln Asp His Met Ser Glu Pro Gln His
580 585 590

Gln Gln Arg Leu Gly Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu
595 600 605

Ser Leu Leu Pro Val Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu
610 615 620

Pro Pro Pro Arg Arg Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly
625 630 635 640

Asp Leu Ile Gln His Arg Arg Thr Gln Asp His Lys Ile Ala Lys Gln
645 650 655

Ser Leu Arg Pro Phe Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro
660 665 670

Arg Lys Phe Val Glu His Val Lys Ser Gln Gly His Lys Asp Lys Ala
675 680 685

Lys Glu Leu Lys Ser Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp
690 695 700

```
His Phe Ile Thr Val Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu
705                 710                 715                 720

Glu Glu Glu Asp Asp Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu
                725                 730                 735

Leu Cys Lys Gln Val Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys
            740                 745                 750

Gly Ser Glu Thr Tyr Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu
        755                 760                 765

Val Pro Val Met Gly Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His
    770                 775                 780

Ser Asn Ser Gly Ala Gln Leu Ser His Cys Lys Ser Leu Gly His Phe
785                 790                 795                 800

Glu Asn Leu Gln Lys Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr
                805                 810                 815

Arg Pro Val Ser Arg Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr
            820                 825                 830

Ala Leu Phe Thr Ser Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln
        835                 840                 845

Asp Lys Thr Pro Ser Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu
    850                 855                 860

Pro Arg Arg Ser Thr Arg Leu Lys Thr
865                 870
```

<210> 66
<211> 2821
<212> DNA
<213> Homo sapiens

<400> 66
tgggggctgc ggggccggcc catccgtggg ggcgacttga gcgttgaggg cgcgcgggga 60

ggcgagccac catgttcagc cagcagcagc agcagctcca gcaacagcag ggccccgttg 120

cccatggctg tcagccgggg gctccccccg cagcagccac agcagccgct tctgaatctc 180

cagggcacca actcagcctc cctcctcaac ggctccatgc tgcagagagc tttgctttta 240

cagcagttgc aaggactgga ccagtttgca atgccaccag ccacgtatga cactgccggt 300

ctcaccatgc ccacagcaac actgggtaac ctccgaggct atggcatggc atccccaggc 360

ctcgcagccc ccagcctcac acccccacaa ctggccactc caaatttgca acagttcttt 420

ccccaggcca ctcgccagtc cttgctggga cctcctcctg ttggggtccc catgaaccct 480

tcccagttca acctttcagg acggaacccc cagaaacagg cccggacctc ctcctctacc 540

acccccaatc gaaaggattc ttcttctcag acaatgcctg tggaagacaa gtcagacccc 600

ccagaggggt ctgaggaagc cgcagagccc cggatggaca caccagaaga ccaagattta 660

ccgccctgcc cagaggacat cgccaaggaa aaacgcactc cagcacctga gcctgagcct 720

tgtgaggcgt ccgagctgcc agcaaagaga ttgaggagct cagaagagcc cacagagaag 780

gaacctccag ggcagttaca ggtgaaggcc cagccgcagg cccggatgac agtaccgaaa 840

cagacacaga caccagacct gctgcctgag gccctggaag cccaagtgct gccacgattc 900

cagccacggg tcctgcaggt ccaggcccag gtgcagtcac agactcagcc gcggatacca 960

tccacagaca cccaggtgca gccaaagctg cagaagcagg cgcaaacaca gacctctcca 1020

gagcacttag tgctgcaaca gaagcaggtg cagccacagc tgcagcagga ggcagagcca 1080

cagaagcagg tgcagccaca ggtacagcca caggcacatt cacagggccc aaggcaggtg 1140

cagctgcagc aggaggcaga gccgctgaag caggtgcagc cacaggtgca gccccaggca 1200

cattcacagc ccccaaggca ggtgcagctg cagctgcaga agcaggtcca gacacagaca 1260

tatccacagg tccacacaca ggcacagcca agcgtccagc cacaggagca tcctccagcg 1320

caggtgtcag tacagccacc agagcagacc catgagcagc ctcacaccca gccgcaggtg 1380

tcgttgctgg ctccagagca aacaccagtt gtggttcatg tctgcgggct ggagatgcca 1440

cctgatgcag tagaagctgg tggaggcatg gaaaagacct tgccagagcc tgtgggcacc 1500

caagtcagca tggaagagat tcagaatgag tcggcctgtg gcctagatgt gggagaatgt 1560

gaaaacagag cgagagagat gccaggggta tggggcgccg ggggctccct gaaggtcacc 1620

attctgcaga gcagtgacag ccgggccttt agcactgtac ccctgacacc tgtcccccgc 1680

cccagtgact ccgtctcctc caccccctgcg gctaccagca ctccctctaa gcaggccctc 1740

cagttcttct gctacatctg caaggccagc tgctccagcc agcaggagtt ccaggaccac 1800

atgtcggagc ctcagcacca gcagcggcta ggggagatcc agcacatgag ccaagcctgc 1860

ctcctgtccc tgctgcccgt gccccgggac gtcctggaga cagaggatga ggagcctcca 1920

ccaaggcgct ggtgcaacac ctgccagctc tactacatgg gggacctgat ccaacaccgc 1980

aggacacagg accacaagat tgccaaacaa tccttgcgac ccttctgcac cgtttgcaac 2040

cgctacttca aaacccctcg caagtttgtg gagcacgtga agtcccaggg gcataaggac 2100

aaagccaagg agctgaagtc gcttgagaaa gaaattgctg gccaagatga ggaccacttc 2160

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